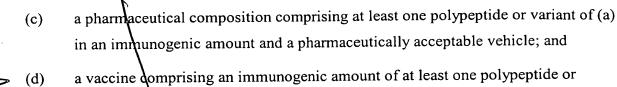
- 1. An isolated polypeptide or variant thereof comprising a polypeptide sequence having substantial identity to a wild type ricin A chain first globular domain sequence and lacks detectable N-glycosidase-rRNA activity or exhibits reduced N-glycosidase-rRNA activity as compared to a control.
- 2. The polypeptide of claim 1, wherein the polypeptide retains the functional integrity of the neutral zing immunological epitope of wild type ricin A chain.
- 3. The polypeptide of claim 1, wherein the polypeptide has an aqueous solubility that is greater than the solubility of wild type ricin A chain.
- 4. The polypeptide of claim 1, wherein the wild type ricin A chain first globular domain sequence is SEQ ID NO:2 or a variant thereof.
- 5. The polypeptide of claim 1, wherein the polypeptide sequence comprises SEQ ID NO:3, SEQ ID NO:4, or a variant thereof.
- 6. The polypeptide of claim 1, wherein the polypeptide sequence is substantially identical to SEQ ID NO:3 or SEQ ID NO:4.
- 7. The polypeptide of claim 1, wherein the polypeptide sequence lacks a hydrophobic loop that corresponds to the hydrophobic loop of wild type ricin A chain.
- 8. The polypeptide of claim 1, wherein the polypeptide sequence comprises at least one amino acid mutation, substitution, deletion, or a combination thereof, when compared to an amino acid sequence of ricin.
 - 9. The polypeptide of claim 1, made by recombinant DNA techniques.
- 10. The polypeptide of claim 1, made by proteolytically cleaving the first globular domain and the second globular domain of ricin A chain and then purifying the first globular domain.
 - 11. An isolated polynucleotide that encodes the polypeptide or variant of claim 1.
 - 12. An antibody raised against the polypeptide or variant of claim 1.
- 13. The antibody of dain 12, wherein the antibody is a neutralizing antibody that is capable of neutralizing ricin, ricin A chain, or both.

- 14. A pharmaceutical composition comprising at least one polypeptide or variant of claim 1 in an immunogenic amount and a pharmaceutically acceptable vehicle.
 - 15. The pharmaceutical composition of claim 14, and further comprising an adjuvant.
- The pharmaceutical composition of claim 14, wherein the composition is capable of eliciting an immune response when administered to a subject.
- 17. The pharmaceutical composition of claim 16, wherein the immune response is a protective immune response.
- 18. A pharmaceutical composition comprising at least one antibody of claim 12 in a therapeutically effective amount and a pharmaceutically acceptable vehicle.
- 19. A vaccine comprising an immunogenic amount of at least one polypeptide or variant of claim 1.
- 20. A method of inducing an immune response in a subject which comprises administering to the subject at least one immunogenic amount of the polypeptide or variant of claim 1.
- 21. The method of claim 20, which further comprises administering to the subject at least one booster dose.
- 22. A method of providing passive immunity against ricin intoxication in a subject comprising administering to the subject a therapeutically effective amount of at least one antibody of claim 12.
- 23. A method of treating or preventing ricin intoxication in a subject comprising administering to the subject an immunogenic amount of the polypeptide or variant of claim 1, or administering to the subject a therapeut cally effective amount of an antibody raised against the polypeptide or variant of claim 1.
 - 24. A kit comprising at least one of the following
 - (a) an isolated polypeptide or variant thereof comprising a polypeptide sequence having substantial identity to a wild type ricin A chain first globular domain sequence and lacks detectable N-glycosidase-rRNA activity or exhibits reduced N-glycosidase-rRNA activity as compared to a control;
 - (b) an antibody raised against the isolated polypeptide or variant of (a);



a vaccine comprising an immunogenic amount of at least one polypeptide or variant of (a);

packaged together with instructions for use.